DOE Computer Graphics Forum 2012 Site Survey

Site Name: Idaho National Laboratory

Site Division or Group: Center for Advanced Modeling and Simulation

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Group Overview

Mission:
Enable advanced modeling, simulation, and visualization at the Idaho National Laboratory (INL) by performing both applied and basic computational science & engineering research and by providing high-performance computing and visualization capabilities, leadership and expertise to facilitate advances in the leading edge of nuclear energy technologies and the multi-program areas of the laboratory.

Past Year's Activities:
In FY11 INL deployed a new 12,512 core Appro system named 'fission'. This resource has enabled significant development projects using the MOOSE framework. This hardware supports the core INL mission as well as work in NEAMS and CASL. We continue to support visualization work in both the CAVE^{TM} as well as a small fleet of portable immersive visualization workstations (IQ-Station).

Plans and Priorities:
No major purchases or upgrades are scheduled for the remainder of FY12 other than normal maintenance and operational improvements. We will begin FY13 planning work for HPC and visualization upgrades.

Funding Sources
CAMS is funded by institutional sources and LDRD.

Current Resources

Hardware:

Barco PowerWall – 3x2@1400x1050, Dell T7500, dual Xeon X5560 @ 2.80GHz, 48G RAM, dual nVidia Quadro Plex 2200 D2

Cyviz PowerWall – 2x1@1400x1050, Dell T5500, dual Xeon X5560 @ 2.80GHz, 9G RAM, nVidia Quadro 5800

Samsung TileWall – 3x3@1366x768, Dell T5500, dual Xeon X5670 @ 2.93GHz, 24G RAM, nVidia Quadro Plex 2200 D2

Mechdyne Flex CAVE – 4 walls driven by Titan projectors. Intersense tracking. Five independent video sources including two shared memory systems with dual nVidia Quadro Plex 2200 D2, a four node cluster of Dell T5500 systems with nVidia Quadro 5800 cards, and two HP systems.

IQ-stations (QTY 6) – 74" Mitsubishi 3D TV, NaturalPoint tracking, Dell T5500, dual Xeon X5670 @ 2.93GHz, 24G RAM, nVidia Quadro 5800/6000

Software:

ParaView, EnSight, VisIt. Vrui VR toolkit for the CAVE.

Staff:

3 for visualization operations: one for hardware support, one for giving demonstrations, and one to provide coordination.

5 for computational science.

10 for HPC operations.

Planned Growth

Hardware Acquisitions

New optical tracking system.

Software Acquisitions

None